

SEQUENCE LISTING

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Neidhardt, Helge

Paulista, Michael

<120> NEW GROWTH/DIFFERENTIATING FACTOR OF TGF- β Family

<130> 100564-09022

<140> US 09/386,450

<141> 1999-08-31

<150> US 08/288,508

<151> 1994-08-10

<150> DE P 43 26 829.3

<151> 1993-08-10

<150> DE P 44 18 222.8

<151> 1994-05-25

<150> DE P 44 20 157.5

<151> 1994-06-09

<160> 41

<170> PatentIn version 3.0

<210> 1

<211> 2703

<212> DNA

<213> Homo sapiens

<220>

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<222> (1)..(2703)

<223> coding region and non-translated regions for TGF-beta protein MP-52

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ttctgagtt caggtttgta aaagatttt ctgagcacct gcaggcctgt gagtgtgtgt 180

gtgtgtgtgt gtgtgtgtgt gtgtgtgtga agtattttca ctggaaagga ttcaaaacta 240

gggggaaaaa aaaactggag cacacaggca gcattacgcc attcttcctt ctggaaaaa 300

tccctcagcc ttatacaagc ctcttcaag ccctcagtca gttgtgcagg agaaaggggg 360

cggttggtt tctccttca agaacgagtt atttcagct gctgactgga gacggtgcac 420

gtctggatac gagagcattt ccactatggg actggataca aacacacacc cggcagactt 480

caagagtctc agactgagga gaaagccttt cctctgctg ctactgctgc tgccgctgct 540

tttgaaagtc cactccttc atggttttc ctgcaaacc agaggcacct ttgctgctgc 600

cgctgttctc ttggtgtca ttacgaggct ggccagagga tgagactccc caaactctc 660

actttctgc ttggtacct ggcttggtg gacctggaat tcactgcac tgtgtgggt 720

gcccctgact tgggccagag accccagggg accaggccag gattggcaa agcagaggcc 780

aaggagaggc cccccctggc ccggaacgtc ttacggccag ggggtcacag ctatggtggg 840

ggggccacca atgccaatgc cagggcaaag ggaggcaccg ggcagacagg aggcctgaca 900

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cct

2703

<210> 2

<211> 501

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(501)

<223> TGF-beta protein MP-52 precursor

<400> 2

Met Arg Leu Pro Lys Leu Leu Thr Phe Leu Leu Trp Tyr Leu Ala Trp

1 5 10 15

Leu Asp Leu Glu Phe Ile Cys Thr Val Leu Gly Ala Pro Asp Leu Gly

20 25 30

Gln Arg Pro Gln Gly Thr Arg Pro Gly Leu Ala Lys Ala Glu Ala Lys

35 40 45

Glu Arg Pro Pro Leu Ala Arg Asn Val Phe Arg Pro Gly Gly His Ser

50 55 60

Tyr Gly Gly Gly Ala Thr Asn Ala Asn Ala Arg Ala Lys Gly Gly Thr

65 70 75 80

Gly Gln Thr Gly Gly Leu Thr Gln Pro Lys Lys Asp Glu Pro Lys Lys

85 90 95

Leu Pro Pro Arg Pro Gly Gly Pro Glu Pro Lys Pro Gly His Pro Pro

100 105 110

Gln Thr Arg Gln Ala Thr Ala Arg Thr Val Thr Pro Lys Gly Gln Leu

115 120 125

Pro Gly Gly Lys Ala Pro Pro Lys Ala Gly Ser Val Pro Ser Ser Phe
130 135 140

Leu Leu Lys Lys Ala Arg Glu Pro Gly Pro Pro Arg Glu Pro Lys Glu
145 150 155 160

Pro Phe Arg Pro Pro Pro Ile Thr Pro His Glu Tyr Met Leu Ser Leu
165 170 175

Tyr Arg Thr Leu Ser Asp Ala Asp Arg Lys Gly Gly Asn Ser Ser Val
180 185 190

Lys Leu Glu Ala Gly Leu Ala Asn Thr Ile Thr Ser Phe Ile Asp Lys
195 200 205

Gly Gln Asp Asp Arg Gly Pro Val Val Arg Lys Gln Arg Tyr Val Phe
210 215 220

Asp Ile Ser Ala Leu Glu Lys Asp Gly Leu Leu Gly Ala Glu Leu Arg
225 230 235 240

Ile Leu Arg Lys Lys Pro Ser Asp Thr Ala Lys Pro Ala Ala Pro Gly
245 250 255

Gly Gly Arg Ala Ala Gln Leu Lys Leu Ser Ser Cys Pro Ser Gly Arg
260 265 270

Gln Pro Ala Ser Leu Leu Asp Val Arg Ser Val Pro Gly Leu Asp Gly
275 280 285

Ser Gly Trp Glu Val Phe Asp Ile Trp Lys Leu Phe Arg Asn Phe Lys
290 295 300

Asn Ser Ala Gln Leu Cys Leu Glu Leu Glu Ala Trp Glu Arg Gly Arg
305 310 315 320

Ala Val Asp Leu Arg Gly Leu Gly Phe Asp Arg Ala Ala Arg Gln Val

325	330	335	
His Glu Lys Ala Leu Phe Leu Val Phe Gly Arg Thr Lys Lys Arg Asp			
340	345	350	
Leu Phe Phe Asn Glu Ile Lys Ala Arg Ser Gly Gln Asp Asp Lys Thr			
355	360	365	
Val Tyr Glu Tyr Leu Phe Ser Gln Arg Arg Lys Arg Arg Ala Pro Leu			
370	375	380	
Ala Thr Arg Gln Gly Lys Arg Pro Ser Lys Asn Leu Lys Ala Arg Cys			
385	390	395	400
Ser Arg Lys Ala Leu His Val Asn Phe Lys Asp Met Gly Trp Asp Asp			
405	410	415	
Trp Ile Ile Ala Pro Leu Glu Tyr Glu Ala Phe His Cys Glu Gly Leu			
420	425	430	
Cys Glu Phe Pro Leu Arg Ser His Leu Glu Pro Thr Asn His Ala Val			
435	440	445	
Ile Gln Thr Leu Met Asn Ser Met Asp Pro Glu Ser Thr Pro Pro Thr			
450	455	460	
Cys Cys Val Pro Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe Ile Asp			
465	470	475	480
Ser Ala Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val Val Glu			
485	490	495	
Ser Cys Gly Cys Arg			
500			

<210> 3

<211> 24

<212> DNA

<213> Artificial

<220>

<221> misc_feature

<222> (1)..(24)

<223> adapter primer

<400> 3

agaattcgca tgccatgggc gacg

24

<210> 4

<211> 23

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(23)

<223> MP-52 internal primer

<400> 4

cttgagtacg aggctttcca ctg

23

<210> 5

<211> 24

<212> DNA

<213> Artificial

<220>

<221> misc_feature

<222> (1)..(24)

<223> adapter primer

<400> 5

attcgcatgc catggtcgac gaag

24

<210> 6

<211> 23

<212> DNA

<213> Homo sapiens

<220>

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<222> (1)..(23)

<223> MP-52 internal primer

<400> 6

ggagcccacg aatcatgcag tca

23

<210> 7

<211> 23

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(23)

<223> MP-52 internal primer

<400> 7

acagcaggtg ggtggtgtgg act

23

<210> 8

<211> 44

<212> DNA

<213> Artificial

<220>

<221> misc_feature

<222> (1)..(44)

<223> primer composed of oligo dT and an adapter sequence

<400> 8

agaattcgca tgccatggc gacgaagctt tttttttt ttt

44

<210> 9

<211> 20

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(20)

<223> MP-52 internal primer

<400> 9

ccagcagccc atccttctcc

20

<210> 10

<211> 24

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(24)

<223> MP-52 internal primer

<400> 10

tccagggcac taatgtcaaa cacg

24

<210> 11

<211> 24

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(24)

<223> MP-52 internal primer

<400> 11

actaatgtca aacacgtacc tctg

24

<210> 12

<211> 10

<212> DNA

<213> Artificial

<220>

<221> misc_feature

<222> (1)..(10)

<223> adapter

<400> 12

agcggccgct

10

<210> 13

<211> 102

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(102)

<223> partial sequence of MP-52 starting with the first of the seven conserved cysteins

<400> 13

Cys Ser Arg Lys Ala Leu His Val Asn Phe Lys Asp Met Gly Trp Asp

1 5 10 15

Asp Trp Ile Ile Ala Pro Leu Glu Tyr Glu Ala Phe His Cys Glu Gly

20 25 30

Leu Cys Glu Phe Pro Leu Arg Ser His Leu Glu Pro Thr Asn His Ala

35 40 45

Val Ile Gln Thr Leu Met Asn Ser Met Asp Pro Glu Ser Thr Pro Pro

50 55 60

Thr Cys Cys Val Pro Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe Ile

65 70 75 80

Asp Ser Ala Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val Val

85

90

95

Glu Ser Cys Gly Cys Arg

100

<210> 14

<211> 101

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(101)

<223> portion of BMP 2 corresponding to MP 52

<400> 14

Cys Lys Arg His Pro Leu Tyr Val Asp Phe Ser Asp Val Gly Trp Asn

1

5

10

15

Asp Trp Ile Val Ala Pro Pro Gly Tyr His Ala Phe Tyr Cys His Gly

20

25

30

Glu Cys Pro Phe Pro Leu Ala Asp His Leu Asn Ser Thr Asn His Ala

35

40

45

Ile Val Gln Thr Leu Val Asn Ser Val Asn Ser Lys Ile Pro Lys Ala

50

55

60

Cys Cys Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu Tyr Leu Asp

65

70

75

80

Glu Asn Glu Lys Val Val Leu Lys Asn Tyr Gln Asp Met Val Val Glu

85

90

95

Gly Cys Gly Cys Arg

100

<210> 15

<211> 101

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(101)

<223> portion of BMP 4 corresponding to MP 52

<400> 15

Cys Arg Arg His Ser Leu Tyr Val Asp Phe Ser Asp Val Gly Trp Asn

1 5 10 15

Asp Trp Ile Val Ala Pro Pro Gly Tyr Gln Ala Phe Tyr Cys His Gly

20 25 30

Asp Cys Pro Phe Pro Leu Ala Asp His Leu Asn Ser Thr Asn His Ala

35 40 45

Ile Val Gln Thr Leu Val Asn Ser Val Asn Ser Ser Ile Pro Lys Ala

50 55 60

Cys Cys Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu Tyr Leu Asp

65 70 75 80

Glu Tyr Asp Lys Val Val Leu Lys Asn Tyr Gln Glu Met Val Val Glu

85 90 95

Gly Cys Gly Cys Arg

100

<210> 16

<211> 102

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(102)

<223> portion of BMP 5 corresponding to MP 52

<400> 16

Cys Lys Lys His Glu Leu Tyr Val Ser Phe Arg Asp Leu Gly Trp Gln

1 5 10 15

Asp Trp Ile Ile Ala Pro Glu Gly Tyr Ala Ala Phe Tyr Cys Asp Gly

20 25 30

Glu Cys Ser Phe Pro Leu Asn Ala His Met Asn Ala Thr Asn His Ala

35 40 45

Ile Val Gln Thr Leu Val His Leu Met Phe Pro Asp His Val Pro Lys

50 55 60

Pro Cys Cys Ala Pro Thr Lys Leu Asn Ala Ile Ser Val Leu Tyr Phe

65 70 75 80

Asp Asp Ser Ser Asn Val Ile Leu Lys Lys Tyr Arg Asn Met Val Val

85 90 95

Arg Ser Cys Gly Cys His

100

<210> 17

<211> 102

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(102)

<223> portion of BMP 6 corresponding to MP 52

<400> 17

Cys Arg Lys His Glu Leu Tyr Val Ser Phe Gln Asp Leu Gly Trp Gln

1 5 10 15

Asp Trp Ile Ile Ala Pro Lys Gly Tyr Ala Ala Asn Tyr Cys Asp Gly

20 25 30

Glu Cys Ser Phe Pro Leu Asn Ala His Met Asn Ala Thr Asn His Ala

35 40 45

Ile Val Gln Thr Leu Val His Leu Met Asn Pro Glu Tyr Val Pro Lys

50 55 60

Pro Cys Cys Ala Pro Thr Lys Leu Asn Ala Ile Ser Val Leu Tyr Phe

65 70 75 80

Asp Asp Asn Ser Asn Val Ile Leu Lys Lys Tyr Arg Asn Met Val Val

85 90 95

Arg Ala Cys Gly Cys His

100

<210> 18

<211> 102

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(102)

<223> portion of BMP 7 corresponding to MP 52

<400> 18

Cys Lys Lys His Glu Leu Tyr Val Ser Phe Arg Asp Leu Gly Trp Gln

1 5 10 15

Asp Trp Ile Ile Ala Pro Glu Gly Tyr Ala Ala Tyr Tyr Cys Glu Gly

20 25 30

Glu Cys Ala Phe Pro Leu Asn Ser Tyr Met Asn Ala Thr Asn His Ala

35 40 45

Ile Val Gln Thr Leu Val His Phe Ile Asn Pro Glu Thr Val Pro Lys

50 55 60

Pro Cys Cys Ala Pro Thr Gln Leu Asn Ala Ile Ser Val Leu-Tyr Phe
65 70 75 80

Asp Asp Ser Ser Asn Val Ile Leu Lys Lys Tyr Arg Asn Met Val Val
 85 90 95

Arg Ala Cys Gly Cys His
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<210> 19

<211> 36

<212> DNA

<213> Artificial

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<222> (1)..(36)

<223> primer OD

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36

<210> 20

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of BMP 2 corresponding to primer OD

<400> 20

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<212> DNA

<213> Homo sapiens

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<222> (1)..(22)

<223> portion of BMP 3 corresponding to primer OD

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atattggctg gagtgaatgg at

22

<210> 22

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of BMP 4 corresponding to primer OD

<400> 22

atgtgggctg gaatgactgg at

22

<210> 23

<211> 22

<212> DNA

<213> Homo sapiens

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<221> misc_feature

<222> (1)..(22)

<223> portion of BMP 7 corresponding to primer OD

<400> 23

acctgggctg gcaggactgg at

22

<210> 24

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of TGF-beta-1 corresponding to primer OD

<400> 24

aggacctcgg ctggaagtgg at

22

<210> 25

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of TGF-beta-2 corresponding to primer OD

<400> 25

gggatctagg gtggaaatgg at

22

<210> 26

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of TGF-beta-3 corresponding to primer OD

<400> 26

aggatctggg ctggaagtgg gt

22

<210> 27

<211> 22

<212> DNA

<213> Homo sapiens

<220>

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<222> (1)..(22)

<223> portion of Inhibin alpha corresponding to primer OD

<400> 27

agctgggctg ggaacgggtg at

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<210> 28

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of Inhibin beta-A corresponding to primer OD

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22

<210> 29

<211> 22

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(22)

<223> portion of Inhibin beta-B corresponding to primer OD

<400> 29

tcatcggctg gaacgactgg at

22

<210> 30

<211> 29

<212> DNA

<213> Artificial

<220>

<221> misc_feature

<222> (1)..(29)

<223> Primer OID

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29

<210> 31

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of BMP 2 corresponding to primer OID

<400> 31

gagttctgtc gggacacagc a

21

<210> 32

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of BMP 3 corresponding to primer OID

<400> 32

catcttttct ggtacacagc a

21

<210> 33

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of BMP 4 corresponding to primer OID

<400> 33

cagttcagtg ggcacacaac a

21

<210> 34

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of BMP 7 corresponding to primer OID

<400> 34

gagctgcgtg ggcgcacagc a

21

<210> 35

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of TGF-beta-1 corresponding to primer OID

<400> 35

cagcgctgc ggcacgcagc a

21

<210> 36

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of TGF-beta-2 corresponding to primer OID

<400> 36

taaatcttgg gacacgcagc a

21

<210> 37

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of TGF-beta-3 corresponding to primer OID

<400> 37

caggtcctgg ggcacgcagc a

21

<210> 38

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of Inhibin alpha corresponding to primer OID

<400> 38

ccctgggaga gcagcacagc a

21

<210> 39

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of Inhibin beta-A corresponding to primer OID

<400> 39

cagcttggtg ggcacacagc a

21

<210> 40

<211> 21

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)..(21)

<223> portion of Inhibin beta-B corresponding to primer OID

<400> 40

cagcttggtg ggaatgcagc a

21

<210> 41

<211> 10

<212> DNA

<213> Artificial

<220>

<221> misc_feature

<222> (1)..(10)

<223> Adapter

<400> 41

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10